DOCUMENT RESUME

ED 146 134 SP 011 749

AUTHOR Redican, Kerry J.; And Others
TITLE Health Education: A Positive Force in Increasing the Reading Skills of Low Socioeconomic Elementary Students?
PUB DATE 76
NOTE 13p.; Paper presented at the Annual Convention of the American School Health Association (50th, New Orleans, Louisiana, 1976)

EDRS PRICE MF-$0.83 HC-$1.67 Plus Postage.
DESCRIPTORS *Basic Skills; *Elementary School Students; *Health Education; *Integrated Curriculum; Low Income Groups; Reading Skills; *Skill Development; *Socioeconomic Status; Vocabulary Skills

ABSTRACT

The effect of a health unit studying the heart on the reading comprehension and vocabulary skills of lower socioeconomic, sixth-grade elementary school pupils was examined in this study. Sixty-four pupils in a midwest elementary school were divided into two heterogeneous classes. One class received instruction on the heart in a program involving multi-media instruction, learning stations, and varied task assignments. Instructional materials included voluntary and official health agency multi-media materials and a complete library of health texts. Students divided into small heterogeneous groups for study, and each kept vocabulary lists of new words. The health education program lasted a total of nine weeks, five days per week, one hour per day. A pretest of reading skills (the Iowa Test of Basic Skills) was administered which showed no significant differences between experimental and control groups' mean reading comprehension scores. The day after the program ended, the Iowa test was again administered. No significant difference at the .01 level was noted, but the experimental group gained an average of .03 months per week during the nine-week program, while the control group gained an average of .02 months per week. Projecting the mean score over the total academic year (and assuming this 3:2 ratio as representative) would result in a statistically significant score of 5.75 (experimental) and 5.39 (control). Mean vocabulary scores on the posttest did show a significant difference beyond the .01 level, favoring the experimental group. Since development of reading and vocabulary skills involved nearly two hours per day in both groups, with the health education curriculum being the only major difference in curricular experience, the prototype program appeared to have an impact on the experimental students' skill development. (MJB)

Documents acquired by ERIC include many informal unpublished materials not available from other sources. ERIC makes every effort to obtain the best copy available. Nevertheless, items of marginal reproducibility are often encountered and this affects the quality of the microfiche and hardcopy reproductions ERIC makes available via the ERIC Document Reproduction Service (EDRS). EDRS is not responsible for the quality of the original document. Reproductions supplied by EDRS are the best that can be made from the original.

141

ED146134

HEALTH EDUCATION: A POSITIVE FORCE IN INCREASING THE READING SKILLS OF LOW SOCIOECONOMIC ELEMENTARY STUDENTS?

SCOPE OF INTEREST NOTICE
The ERIC Facility has assigned this document for processing to: SP CS
In our judgement, this document is also of interest to the clearinghouses noted to the right. Indexing should reflect their special points of view. V.D

Kerry J. Redican, Ph.D.
Assistant Professor of Medical Administration
Nebraska Center for Health Education
University of Nebraska
Lincoln, Nebraska

Larry K. Olsen, Dr.P.H.
Associate Professor

and

Donald B. Stone, Ed.D.
Professor
Department of Health and Safety Education
University of Illinois
Champaign, Illinois

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

This paper was presented at the 50th Convention of the American School Health Association, New Orleans, Louisiana, 1976.

SP011 449

The Problem

There has been much national concern among educators over the seemingly poor basic skill development of lower socioeconomic students in America. The magnitude of this problem was brought to the attention of educators when the report entitled Equality of Educational Opportunity (Coleman Report) (1) was published and the findings were widely distributed within the media.

Coleman found that, on the average, lower socioeconomic, black students were about one year behind their white counterparts in reading comprehension during the early elementary school years. By grade six they were more than a year and a half behind and by grade nine they were more than two and one-half years behind the average scores achieved by white students. (3:18). In addition, lower socioeconomic American Indians, Mexican Americans, and Puerto Ricans scored below the white average on the basic skills test administered in the Coleman Study.

Since strong correlations exist between reading and vocabulary abilities and good communicative skills, it is imperative that elementary school curricula, especially those found in lower SES areas, emphasize basic skills in the language arts. Most schools allow a significant portion of the day to be spent on developing such skills. These periods of time usually center around a packaged educational curriculum that is designed to allow children to develop more effective reading comprehension and vocabulary skills.

Other curricular areas do not appear to be utilized to add input to basic skill development. Many of these areas could certainly contribute to the development of positive reading comprehension and vocabulary abilities. Health education could serve as an area that, when effectively implemented in the elementary school, might influence the development of basic language skills.

Health Education: Health educators are concerned with implementing a variety of educationally sound learning opportunities so that consumers can

make informed, hopefully positive decisions regarding their health and the health of others. (2:33) If basic skill development activities are subliminally implanted in the learning opportunities, then possibly we could expect an increase in reading comprehension and vocabulary mean scores of those students participating in planned health education activities.

The School Health Curriculum Project, a comprehensive health education curriculum covering grades 3-7, centers around learning opportunities that not only influence the decision making process but also, aid in developing the reading comprehension and vocabulary skills of students. However, this curriculum, due to a variety of reasons, such as expense and the extensive inservice training of teachers that is required has not been implemented in many lower SES community elementary schools across the United States.

The School Health Curriculum Project: The prototype health education curriculum used in this study was the sixth grade unit (Heart Unit) of the School Health Curriculum Project (SHCP). This curriculum involves an innovative multi-media approach to health education, whereby students interact in small groups at learning stations and complete varied tasks assigned at the multi-media stations.

Each unit of the Project employs a complete library of health texts with wide readability indices ranging from the first to the ninth grade. Also included are carefully selected multi-media materials from voluntary and official health agencies and independent organizations specializing in health information bulletins, booklets, and pamphlets. Students utilize all of the printed information during the course of the nine week unit.

The utilization of the material is usually accomplished in small groups. These small groups are heterogeneously arranged to: include above average, average, and below average readers. All students interact and discuss the material, thereby allowing each student to achieve success and learn from his/

her peers. All students keep a vocabulary list which includes definitions of words they did not know when reviewing the materials.

Between the student interaction and the new vocabulary list, this process can have positive impact on increasing the reading comprehension and vocabulary skills of elementary students. This is especially important in lower SES areas where basic skill development is considered by many as the number one educational priority.

Purpose

The purpose of this study was to determine the effects of the Heart Unit of the School Health Curriculum Project on the reading comprehension and vocabulary skills of lower socioeconomic sixth grade elementary students.

Hypothesis

The hypothesis that guided this research was that:

> Students exposed to the Heart Unit of the School Health Curriculum Project will achieve significantly higher posttest mean scores than those students receiving their regular health instruction with respect to reading comprehension and vocabulary scores as measured by the Iowa Test of Basic Skills.

Methodology and Procedures

Sixth grade students from a lower SES community elementary school in the Midwest comprised the sample used in this study. This school was selected since it was a test site for the SHCP and was readily accessible to the researchers.

An experimental (N=33) and control (N=31) group was selected by the building principal who stated that the children were heterogeneously grouped within each classroom. Both groups completed the reading comprehension and vocabulary test portions of the Iowa Test of Basic Skills, Form 5, Level 11. All tests were administered on a pretest-posttest basis. Pretests were

administered before the unit began and the posttests were given immediately after the unit concluded. All students were also involved in the regularly scheduled school reading program. The health education program lasted a total of nine weeks, five days per week, one hour per day.

Pre and posttest mean scores and standard deviations were obtained for both experimental and control groups. T-tests of significance were used to determine if any significant differences occurred pre to posttest between the two groups.

Presentation and Analysis of the Data

Reading Comprehension: Prior to initiation of the prototype health education program the Iowa Test of Basic Skills was administered to both the experimental and control groups. Analysis of group mean scores indicated that there was no significant difference between the experimental and control group's mean reading comprehension scores. (See Table I) This gave further credence to the principal's statement that the two classrooms had been heterogeneously assigned.

INSERT TABLE I

The day after the prototype program ended, the Iowa Test was again administered to both groups. No significant difference at the .01 level was noted between posttest mean scores. (See Table I) However, it must be indicated that the experimental group gained an average of .03 months per week during the nine weeks of the program. The control group, over the same nine week period, gained an average of .02 months per week. This provided a ratio of 3:2 although nearly two hours per day were spent on reading skills in each class. The major difference in curricular experiences between the two classes was the prototype health education program. Thus, if one were to project the mean score gain for each class over the total academic

year, and assumed that the 3:2 ratio was representative, the experimental group would have achieved a reading comprehension mean score of 5.75 and the control group a score of 5.39. This difference is significant thereby suggesting that the prototype health education program might well influence reading comprehension scores and the students exposed to this or similar programs over a prolonged period of time might approach the reading level commensurate with their academic year more rapidly than those students not exposed to such programs. However, additional research is needed to fully support this contention.

Vocabulary Scores: The range of vocabulary scores varied widely within both the experimental and control groups. The experimental group had a higher pretest mean score (3.97 vs 3.88) and a narrower standard deviation (.42 vs .49) than the control group. This difference was not significant at the .01 level. (See Table II)

INSERT TABLE II

The mean vocabulary scores on the posttest did show a significant difference beyond the .01 level with the difference favoring the experimental group. Of further note was the fact that the standard deviation within the experimental group declined .04 months and the standard deviation of the control declined by .03 months over the nine week period of time. This seemed to indicate a greater degree of homogeneity among vocabulary skills in the experimental group than in the control group. Since the difference favored the experimental group, the hypothesis that students exposed to the Heart Unit of the School Health Curriculum Project will achieve higher post-test vocabulary mean scores than students receiving their regular health instruction was supported and the hypothesis was accepted.

Discussion

Both the experimental and the control groups participated in intensive reading programs. The first priority of the school administration was to increase the skill level of all students in both vocabulary and reading comprehension. As previously stated, as much as two hours per day was spent on reading in the regular curriculum. Each classroom teacher was responsible for conducting the reading program in their respective classrooms.

Certainly the SHCP alone was not responsible for the significant increase in vocabulary mean scores of the experimental group. However, the SHCP contains over 40 books with varying readability indices incorporated into it. Further, the student's keeping a list of new vocabulary words along with the definition of these words would seem to contribute to the development of vocabulary skills. This particular facet was not done in the control classroom.

Another possible explanation for the increase of mean vocabulary scores could have been the effect of the pretest. There might have been some test retention over the nine weeks, since the same test instrument was used for the pre and posttest. Owing to the control group showing no significant gain in mean score, yet being tested at the same time using the same instrument as the experimental group, the possibility of pretest effect could be largely discounted.

A third possible explanation rested with the teachers. Perhaps one of the regular classroom teachers was a better reading teacher than the other. Both teachers followed the same reading curriculum using the same methods for the reading curriculum thus it was assumed that no major variances within the reading curriculum would occur. The only way to have accurately controlled for teacher differences would have been to transpose the teachers and classes which did not seem practical because of the guidelines which accompanied the use of the SHCP regarding intensive training of teachers.

It might be over-presumptive to assume a linear progression with respect to reading comprehension scores. Nonetheless, since the experimental students

did score higher on the posttest by a 3:2 month ratio, it does create, at least in the minds of the investigators, some interesting points of speculation and some questions for further research.

As a final point of discussion, the librarian at the school made it a point to see the building principal and the principal investigator during the nine week period of time the project was in operation. She stated that "the students in the experimental class seemed to be using the library more than they had in the past and most of the books they check out deal with science." It was also noted by the librarian that the experimental group children preferred to use the unabridged dictionary rather than the regular school dictionary. Based on these observations plus the positive test score results, the experimental health education program appeared to have had a positive impact not only on the vocabulary development of students, but also on their choice of reading material and their vocabulary curiosity.

Conclusions

Students exposed to the School Health Curriculum Project did not achieve significantly different ($p=.01$) reading comprehension mean scores than students not exposed to the program. However, it must be indicated that the gains measured in this research covered only a nine week period of time and if the reading comprehension mean score gains were projected over the academic year, the difference would be significant.

The experimental students achieved significantly higher posttest vocabulary mean scores than students receiving their regular health instruction. Therefore, the special prototype health education curriculum appeared to have an impact on the experimental student's vocabulary mean scores.

Since the total sample used in this study was small, there is a need for further studies with larger samples to further investigate the effects of the School Health Curriculum Project as well as other prototype programs on the basic skill development of lower SES students.

References

(1) Coleman, J. S. Equality of Educational Opportunity. Washington, D.C.: United States Government Printing Office, 1966.

(2) Joint Committee on Health Education Terminology. "New Definitions." Journal of School Health, XCVII, (January, 1974), pp. 33-34.

(3) Silberman, C. Crisis in the Classroom. New York: Vantage Books, 1971.

TABLE I

Pretest and Posttest Reading Comprehension Mean Scores, Standard Deviations, and t Values between Experimental and Control Groups

Group	N	Pretest			Posttest		
		$\bar{X}$	SD	t	$\bar{X}$	SD	t
E	33	4.68	.64	.07	4.99	.55	.31
C	31	4.67	.47		4.85	.68	

TABLE II

Pretest and Posttest Vocabulary Mean Scores, Standard Deviations, and t Values between Experimental and Control Groups

Group	N	Pretest			Posttest		
		$\bar{X}$	SD	t	$\bar{X}$	SD	t
E	33	3.97	.42	.21	4.83	.38	4.49*
C	31	3.88	.49		4.07	.46	

*Significant beyond the .01 level